

REMARKS

Reconsideration is respectfully requested.

Claims 1-6 and 8-19 are pending.

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Claim 7 has been canceled and its subject matter has been incorporated into claims 1, 9 and 17 respectively. Claims 1, 9 and 17 have been amended to incorporate a description of the cationic mordants which are fused or grafted to a surface of the hydrophilic shell to provide mordant properties to the colorant-receiving layer and the cationic mordant being selected from the group consisting of a polyamine, a polyethyleneimine, a polyamidoamine, a quaternary amine polymer and derivatives thereof. Basis for this amendment can be found in canceled claim 7 as well as in the specification on page 7, lines 28-29, page 8, lines 2-3, and page 10, lines 2-4. No new matter has been added.

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Claims 1-8 and 17-19 stand rejected under 35 U.S.C. 103 (a) as being unpatentable over Wexler (EP 1184195 A2) in view of Ogawa et al. (US 5576088). Furthermore, claims 9-15 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Yau et al (US 2003/0143344 A1) in view of Ogawa et al. (US 5576088). Furthermore, claims 1-8 and 17-19 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Wexler (EP 1184195 A) in view of Wang et al. (US 5756273). Also, claims 9-15 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Yau et al. (US 2003/0143344 A1) in view of Wang et al. (US 5756273). Finally, claim 16 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Yau et al. (US 2003/0143344 A1) in view of Wang et al. (US 5756273) as applied to claims 1-15 and 17-19 , and further in view of De Wacker et al. (US 5512619).

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As presently claimed, the present invention relates to a fusible print medium, comprising: a photobase layer; a vehicle sink layer; and a colorant-receiving layer comprising core-shell polymer particles having a hydrophilic shell and a fusible hydrophobic core, wherein the colorant-receiving layer is

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configured to have a phase inversion that encapsulates a colorant in the colorant-receiving layer, and wherein the hydrophilic shell comprises a latex vinyl polymer, and wherein cationic mordant is fused or grafted to a surface of the hydrophilic shell to provide mordant properties to the colorant-receiving layer, the cationic mordant being selected from the group consisting of a polyamine, a polyethyleneimine, a polyamidoamine, a quaternary amine polymer and derivatives thereof.

The present invention also relates to a method of printing a photographic-quality image by providing the fusible print medium described above; depositing inkjet ink onto the fusible print medium to print a desired image; and fusing the colorant-receiving layer into a continuous, hydrophobic film.

The present invention further relates to a method of producing a fusible print medium, comprising: forming a vehicle sink layer on a photobase layer; and forming a colorant-receiving layer on the vehicle sink layer, the colorant-receiving layer comprising core-shell polymer particles having a hydrophilic shell and a fusible hydrophobic core, wherein the colorant-receiving layer is configured to invert from a porous, hydrophilic surface to a continuous layer having a hydrophobic surface, and wherein the hydrophilic shell comprises a latex vinyl polymer; and wherein cationic mordant is fused or grafted to a surface of the hydrophilic shell to provide mordant properties to the colorant-receiving layer, the cationic mordant being selected from the group consisting of a polyamine, a polyethyleneimine, a polyamidoamine, a quaternary amine polymer and derivatives thereof.

In the above rejections, Wexler and Yau are the primary patents cited. Applicants assert that these patents do not achieve making the invention obvious when combined with the other patents the examiner has cited: Ogawa, Wang and DeWacker. The primary patents as well as the combinations with the other cited patents will be discussed below.

Wexler teaches thermally-compliant core-shell particles in the porous top layer having a shell of inorganic colloidal particles and a core of thermoplastic polymers. In contrast, the presently claimed invention has a colorant receiving layer comprising core-shell polymer particles having a hydrophilic shell and a fusible hydrophobic core

To further contrast Wexler with the presently claimed invention, the inorganic shell of the colloidal particles in Wexler is formed from "colloidal silicas and modified colloidal silicas" (Wexler, p3, [0015]), while the hydrophilic shell of the core-shell polymer particles of the presently claimed invention is formed of latex vinyl polymer. And, unlike Wexler, fused or grafted to the surface of the hydrophilic shell of the presently claimed invention are cationic mordants selected from the group consisting of a polyamine, a polyethyleneimine, a polyamidoamine, a quaternary amine polymer and derivatives thereof.

Even more different from the presently claimed invention is Yau which teaches a support with a fusible, porous, image-receiving layer having non-porous polymeric particles. The particles have a core/shell structure with a polymeric, hydrophobic core covered with a polymeric, hydrophobic shell made from a styrenic or an acrylic monomer (Yau, p.2, [0017]). Clearly the characteristics of a hydrophobic shell surface of the non-porous polymeric particles made from styrenic or acrylic monomer of Yau et al. would be practically opposite from the hydrophilic shell surface of the core-shell polymer of the presently claimed invention. Clearly the ability of the hydrophobic shell to absorb anionic dye from the inkjet ink, as the hydrophilic shell does in the presently claimed invention, would be practically non-existent.

For the above-stated reasons, either Wexler or Yau alone would not render the presently claimed invention obvious. When either Wexler or Yau are combined with either Ogawa, Wang or a combination of Wang and DeWacker in the 103(a) rejections, they do not render the presently claimed invention obvious for the following reasons.

Ogawa teaches using synthetic polymer latex in a gloss-providing layer on an ink-receiving layer on an ink jet recording sheet, (column 11, lines 3-40). Using synthetic polymer latex as a gloss-providing layer is nothing like using it as the actual material of the hydrophilic shell of the colorant-receiving layer in the presently claimed invention.. There is no suggestion in Ogawa to use this
5 gloss-providing layer material in either the inorganic shell of Wexler or the hydrophobic shell of Yau. Such a switch would involve completely redesigning the inorganic shell or hydrophobic shell respectively. Therefore, there would be no motivation to combine either Wexler or Yau with Ogawa.

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Furthermore, neither the combination of Wexler and Ogawa or Yau and Ogawa in the 103(a) rejections teach the use of cationic mordants selected from the group consisting of a polyamine, a polyethyleneimine, a polyamidoamine, a quaternary amine polymer and derivatives thereof.

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Both Wexler and Yau are combined separately with Wang in the 103(a) rejections. Yau is further combined with a combination of Wang and DeWacker. Wang teaches in a conventional silver halide photographic system, a coating composition with polymer latex particles with a hydrophobic core and a hydrophilic polymeric shell (Wang, abstract & column 3, lines 4-7). Furthermore,
20 DeWacker teaches a curing composition for concrete containing a styrene polymer latex (DeWacker, abstract). There is no suggestion in Wang to use a coating composition from a silver halide photographic system in a system for absorbing ink jet print dyes. Furthermore, there is no suggestion in DeWacker to use an additive from a curing composition for concrete. Therefore,
25 Wacker to use an additive from a curing composition for concrete. Therefore, there would be no motivation to combine either Wexler or Yau with Wang and/or DeWacker.

Furthermore, neither the combination of Wexler and Wang; Yau and Wang; or
30 Yau, Wang and DeWacker would teach the use of cationic mordants selected from the group consisting of a polyamine, a polyethyleneimine, a polyamidoamine, a quaternary amine polymer and derivatives thereof.

In view of the above amendments and arguments, the applicants respectfully assert that the presently claimed invention is allowable over the patents asserted in the 103(a) rejections.

- 5 Applicants therefore request that the above rejections be withdrawn and that the present application be allowed.

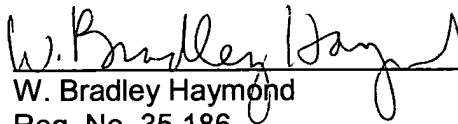
Respectfully submitted,

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